

Working together in large, complex Projects

Differences in Organisation

Process Management as a tool for Collaboration

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Vanderlande Industries

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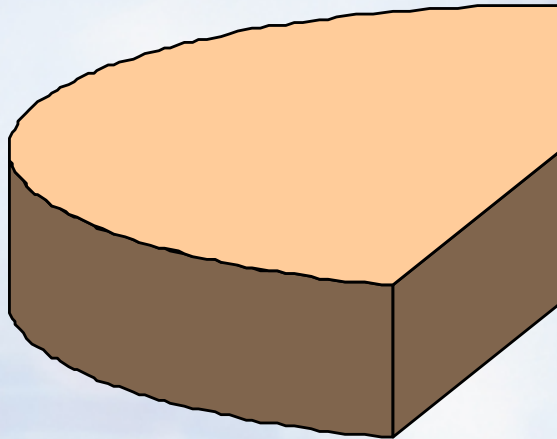
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Vanderlande Industries

- **Integrator of Automated Material Handling Systems**
 - Manufacturing
 - Express Parcels
 - Distribution
 - Baggage Handling
- **Global Player with Headquarters in Veghel (NL)**
- **1300 Employees**
- **Order book of > 600 million**

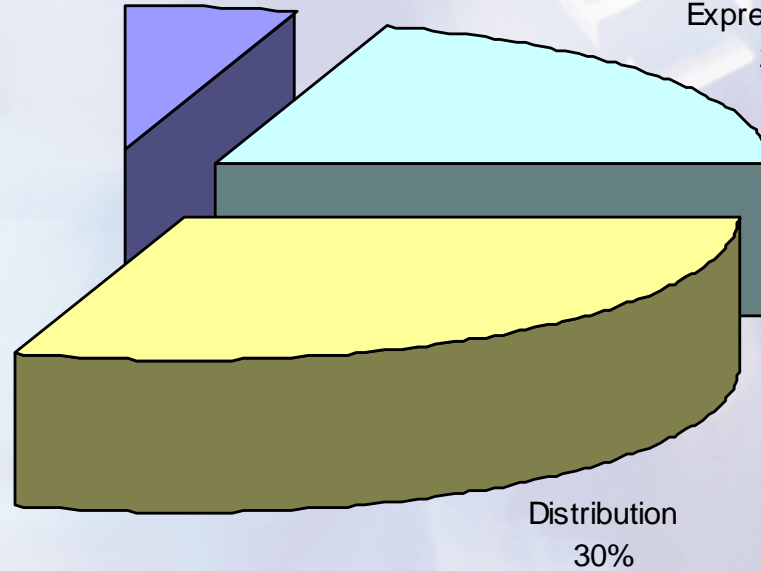
Market Segments

Baggage Handling
45%



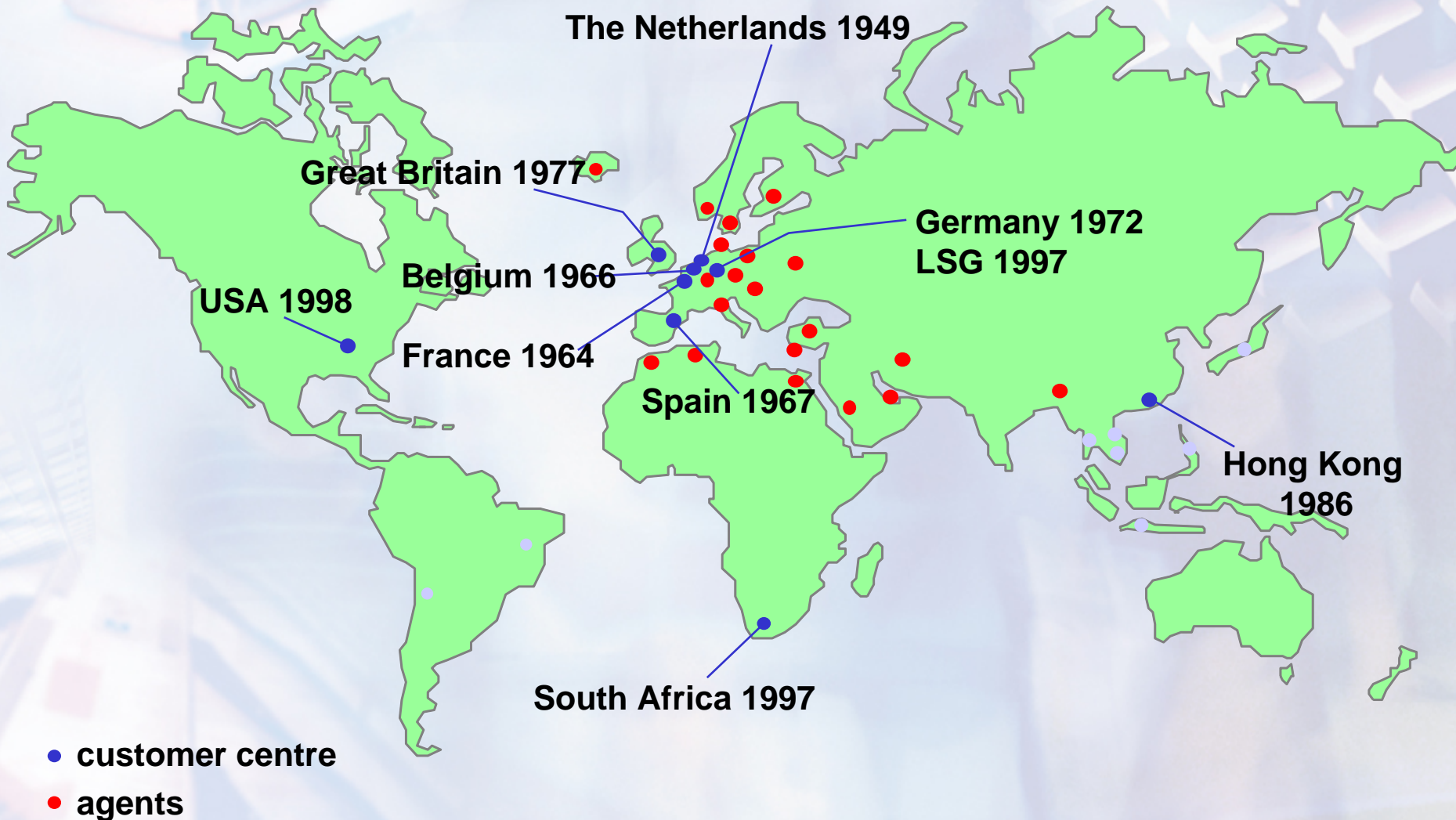
Manufacturing
5%

Express Parcel
20%

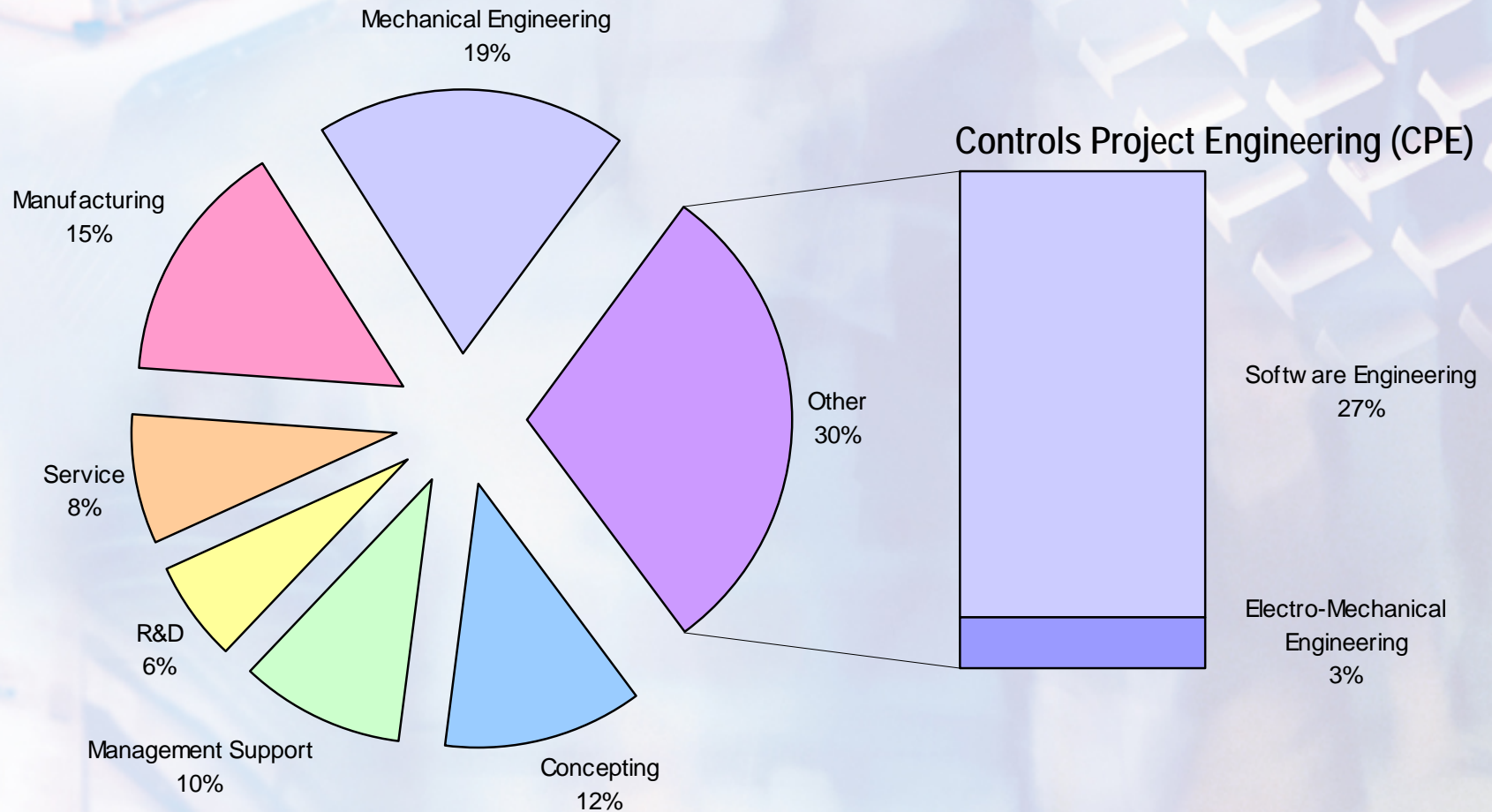


Distribution
30%

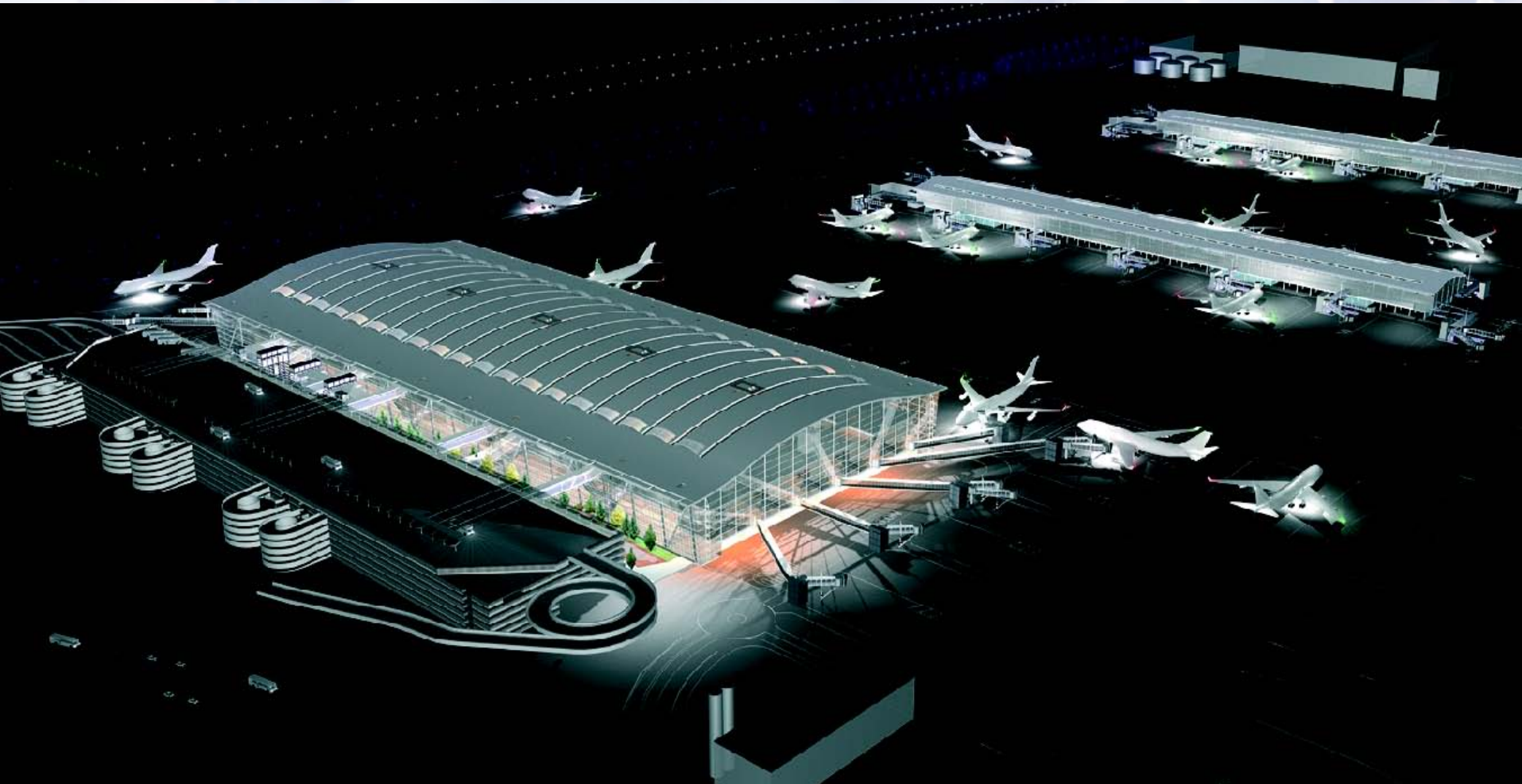
Market Coverage



Discipline Segmentation



BAA - Heathrow Terminal 5 (T5)



T5 Controls Characteristics (1)

- **Larger then VI ever did before**
 - 185 Main Control Panels
 - 9.000 Motors and LIMS
 - 56.000 I/O Points
 - 275 Kilometers of Cables and Trunking (w/o network)
 - 650.000 engineering hours
 - 250.000 installation hours
 - 200.000 commissioning hours
 - Lead Time >5 years
 - 150 Team Members at multiple Locations

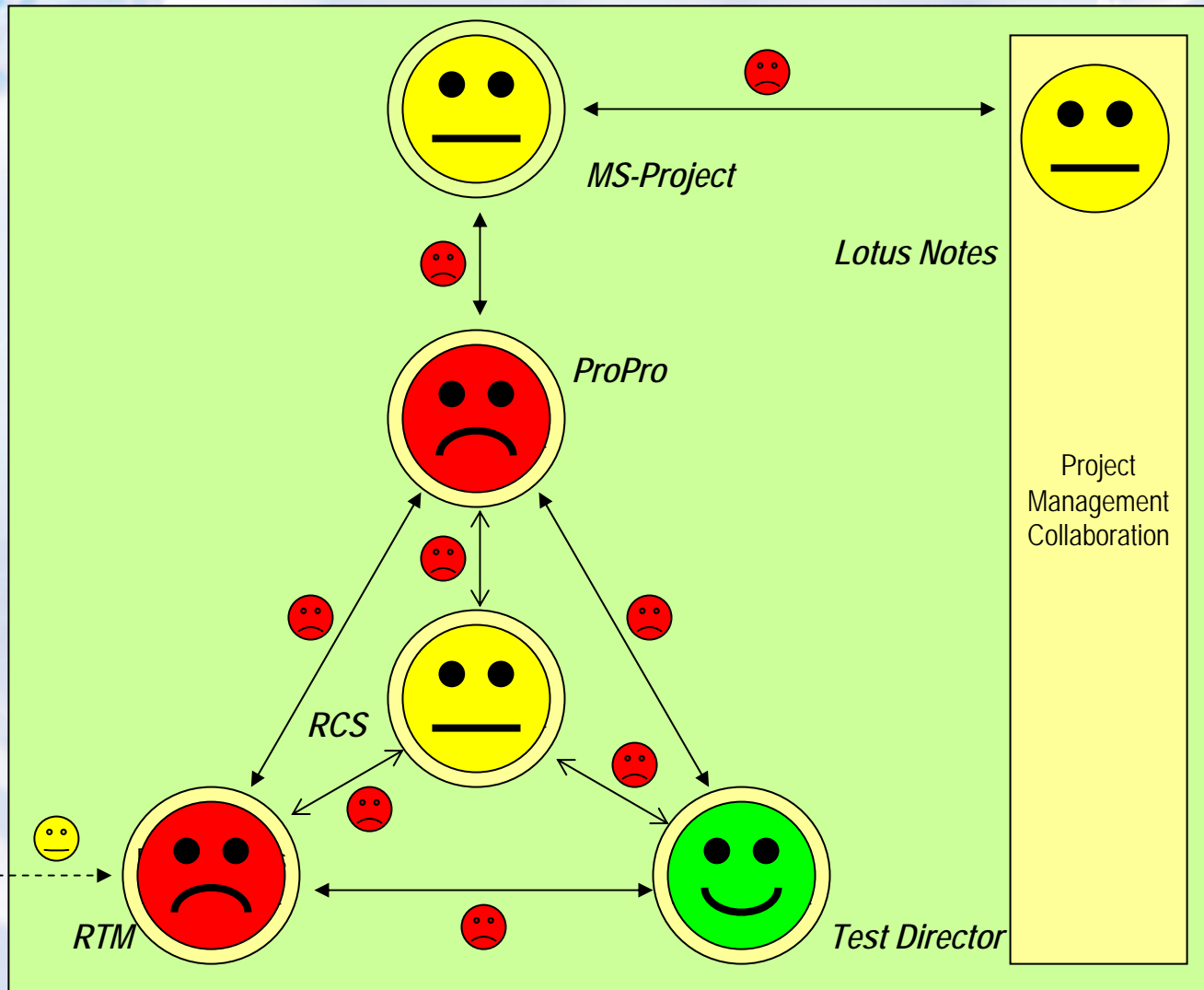
T5 Controls Characteristics (2)

- More complex because of
 - New technology and tools
 - Building structure requiring incremental delivery
 - Working together with various partners at multiple locations
 - Lots of interactions between various sub-projects
 - A steep increase of resources in Q1-2000
 - Few people with relevant domain knowledge
 - BAA not being as responsive as we would like
 - Unstable architecture and requirement sets

Veghel
London
Amsterdam
Beckum
Stuttgart
Hatfield

VI – CPE
VI – MPE
VI – R&D
BAA
IBM
ViaStore
Beumer
ComputaCenter

Initial Processes / Tools (1)



Initial Processes / Tools (2)

- Tools have been selected as stand-alone entities.
- Tools are implemented without a clear view of processes to follow.
- There seems to be an attitude of customising standard tools and processes since VI's way-of-working is special (?)
- Deployment suffers from lack of resources and focus.
- Initial objectives get blurred because tools do not perform as expected.
- Limited capabilities for an integrated and distributed roll-out.
- Limited support for other disciplines than Controls Engineering.

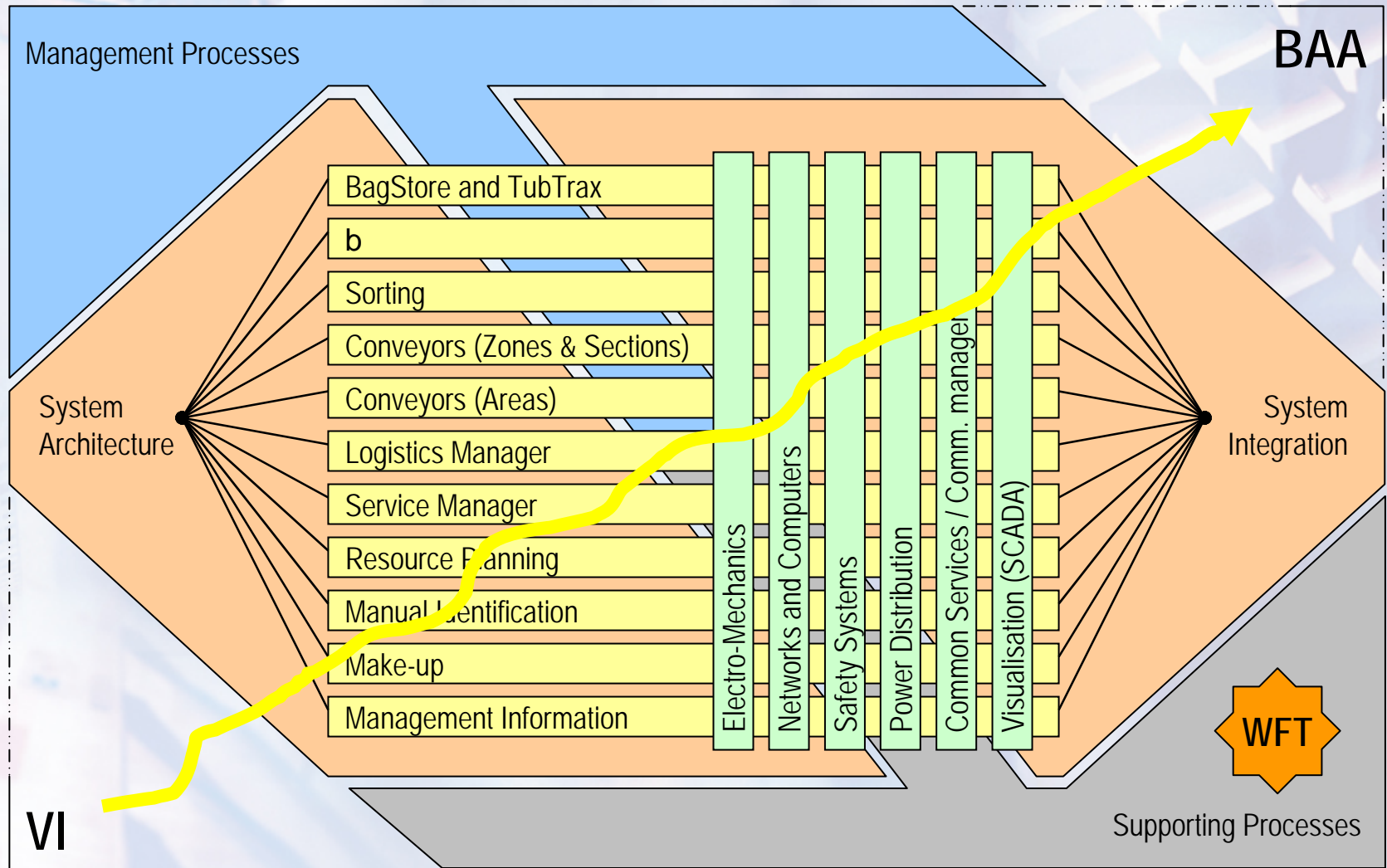
T5 Management and Support Processes not at the right level for such a large and complex project.

The T5 Workflow Team

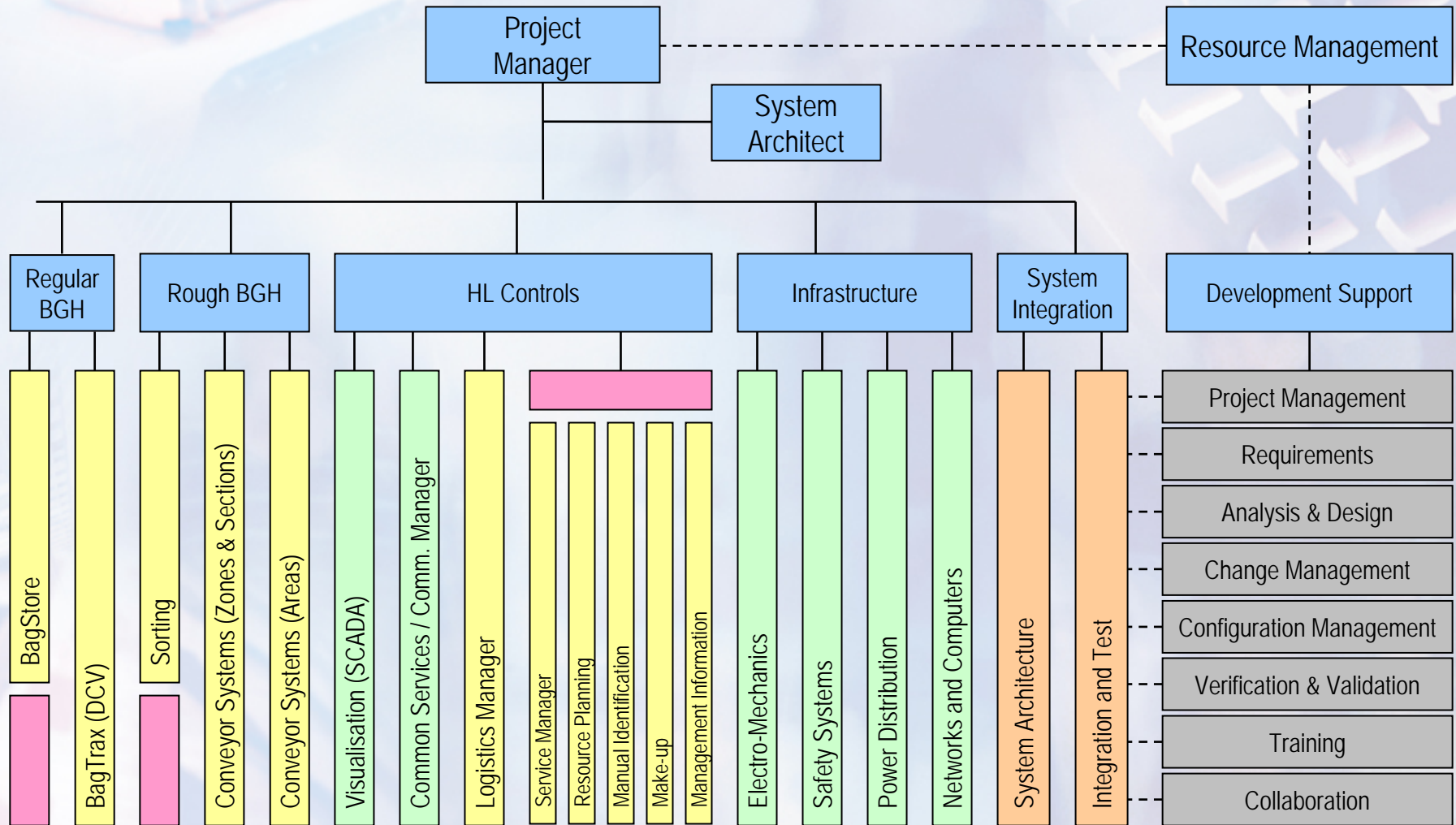
- Started October / November 2003.
- Mostly consists of hired people with experience on defining Processes and Tools covering:
 - Project Management
 - Requirements Management
 - Change Management
 - Configuration Management
 - Test Management
 - Project Collaboration

Objective is to bring the T5 Project in a mature state regarding Processes and Tools.

T5 Controls Project Organisation (1)



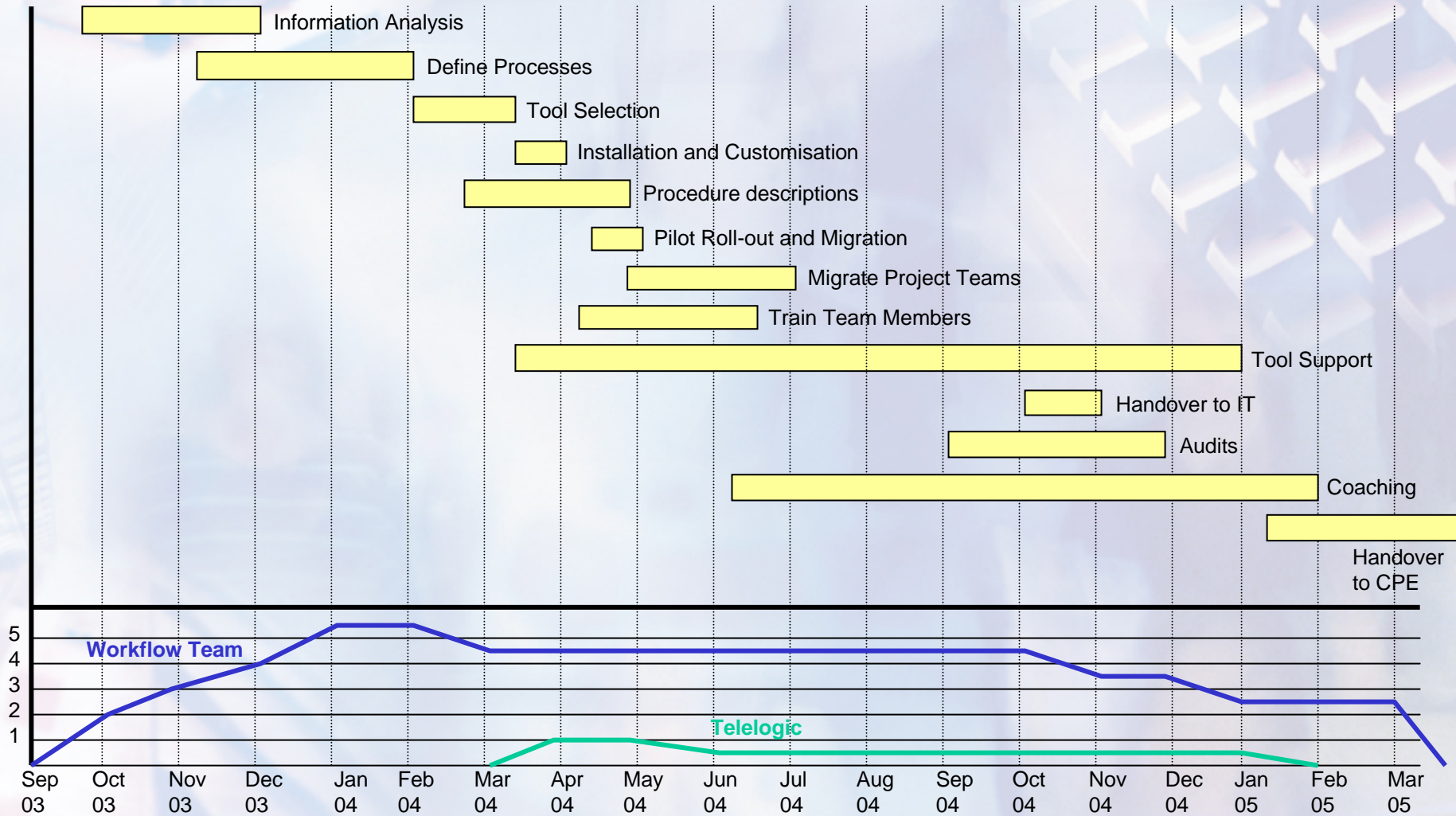
T5 Controls Project Organisation (2)



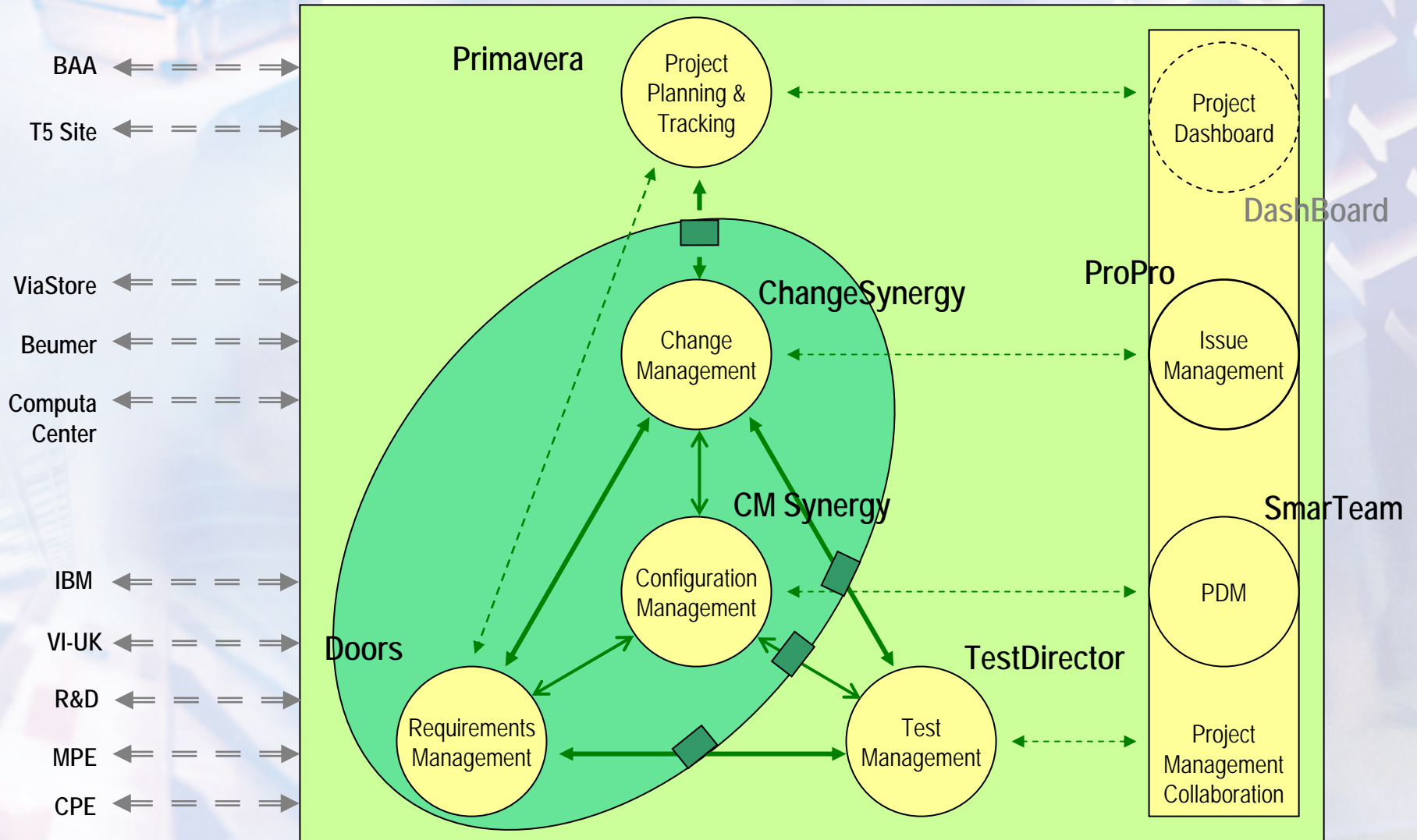
Strategy of the Workflow Team

- Capture the characteristics of the VI Engineering Processes
- Analyse information needs for the various project roles
- Define a set of processes and tools that suites the T5 project
- Re-use available tools / concepts / knowledge as much as possible
- Make use of lessons learned from previous projects
- Work towards an out-of-the-box, integrated environment
- Agree on the level of process integration towards sub-contractors
- Install and deploy a basic level of control ASAP
- Roll-out and improve step by step
- Pilot processes and tools using equipment test loops
- Handover to department at defined milestones
- When finished, assign workflow people to T5 operational roles

Planning Roll-out

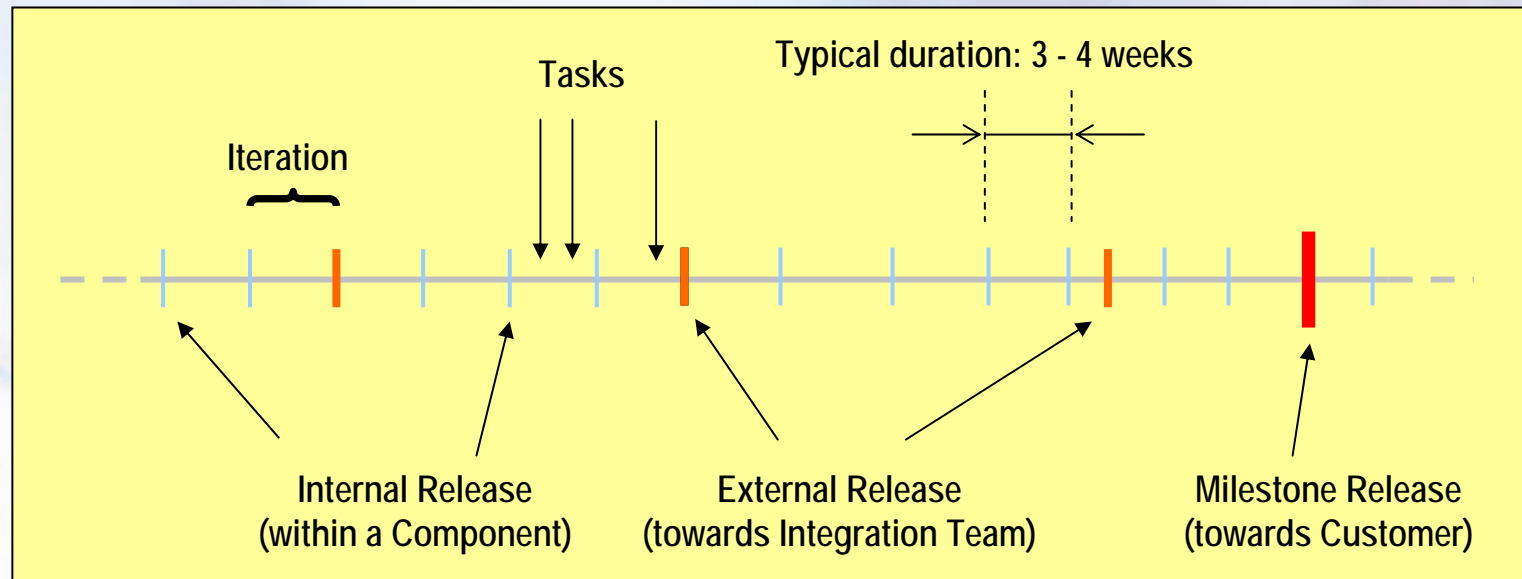


New Workflows and Tools

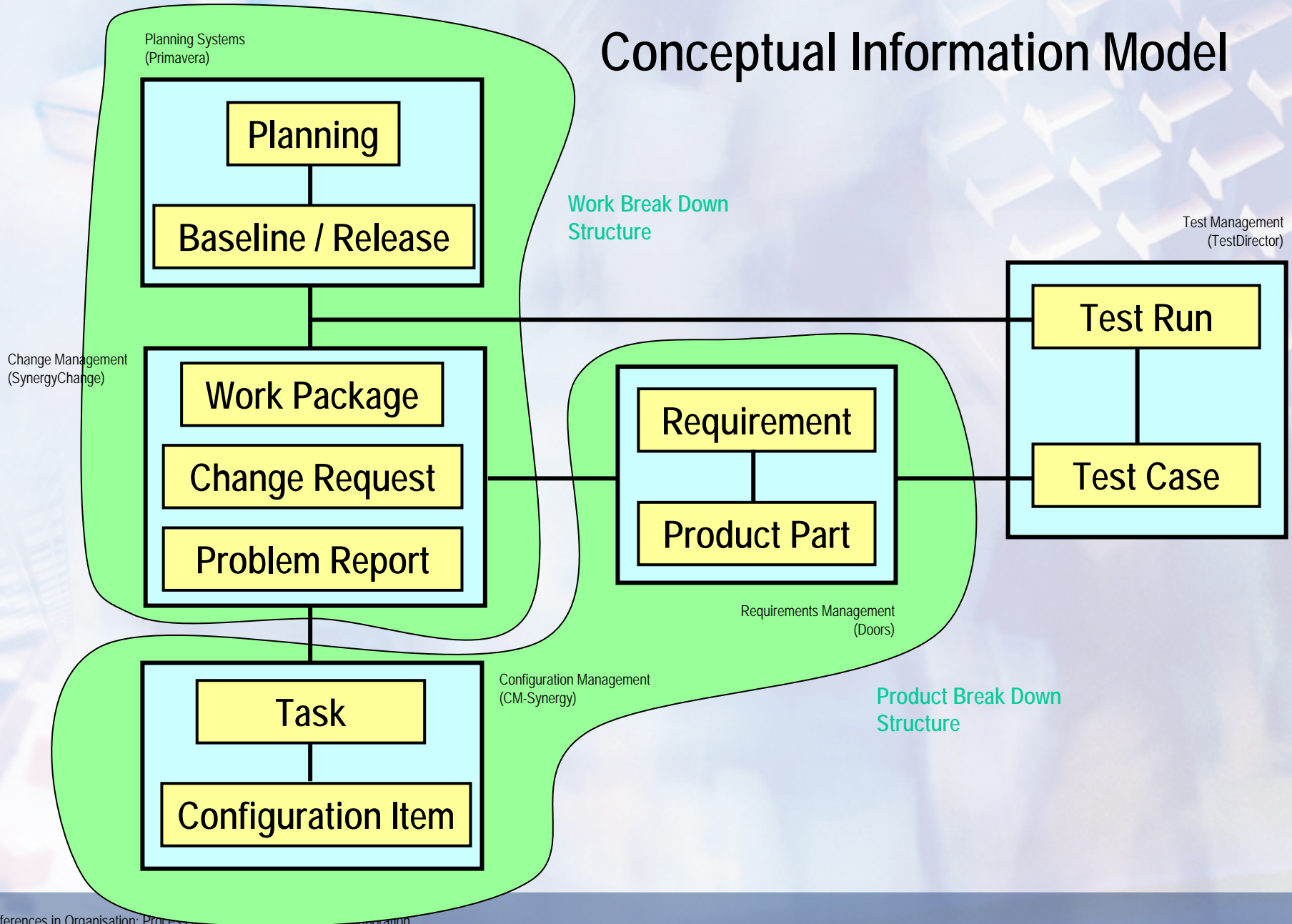


Workflow Core Principles

- Incremental, baseline driven development process.
- Increments contain planned product parts, features and resolved CRPR's.
- All engineering activities are task based.
- Project tracking based on the status of deliverables.
- Requirements tracking through deliverables.



Conceptual Information Model



Communication and Deployment

- Start with road shows to all VI and BAA stakeholders.
- Deploy / review concepts and processes via weekly PM-meetings.
- PM deploy to their teams with support from the workflow team.
- Get further buy-in and commitment via competence teams and key workers.
- Organise deployment meetings towards core team members.
- Training sessions for all team members per component.
- Coaching and support after initial deployment.
- Fixed agenda item at monthly project review meetings.
- Report and discuss progress with BAA on a regular basis.

Tool Summary and Status

Process/Tool Company	Requirements Management (DOORS)	Test Management (TestDirector)	Configuration Management (CM Synergy)	Change Management (ChangeSynergy)	Planning & Tracking (Primavera)
BAA	X	x	Documentum	x	(Artemis)
VI-CPE	X	X	X	X	X
VI-MPE	x		SmarTeam	X	X
VI-R&D	X	X	RCS	x	X
VI-UK	X	X	X	X	X
IBM	X	X	X	X	X
Beumer	(X)	(X)			MS-Project
ViaStore	(X)	(X)			MS-Project
ComputaCenter	X	X	X	X	MS-Project

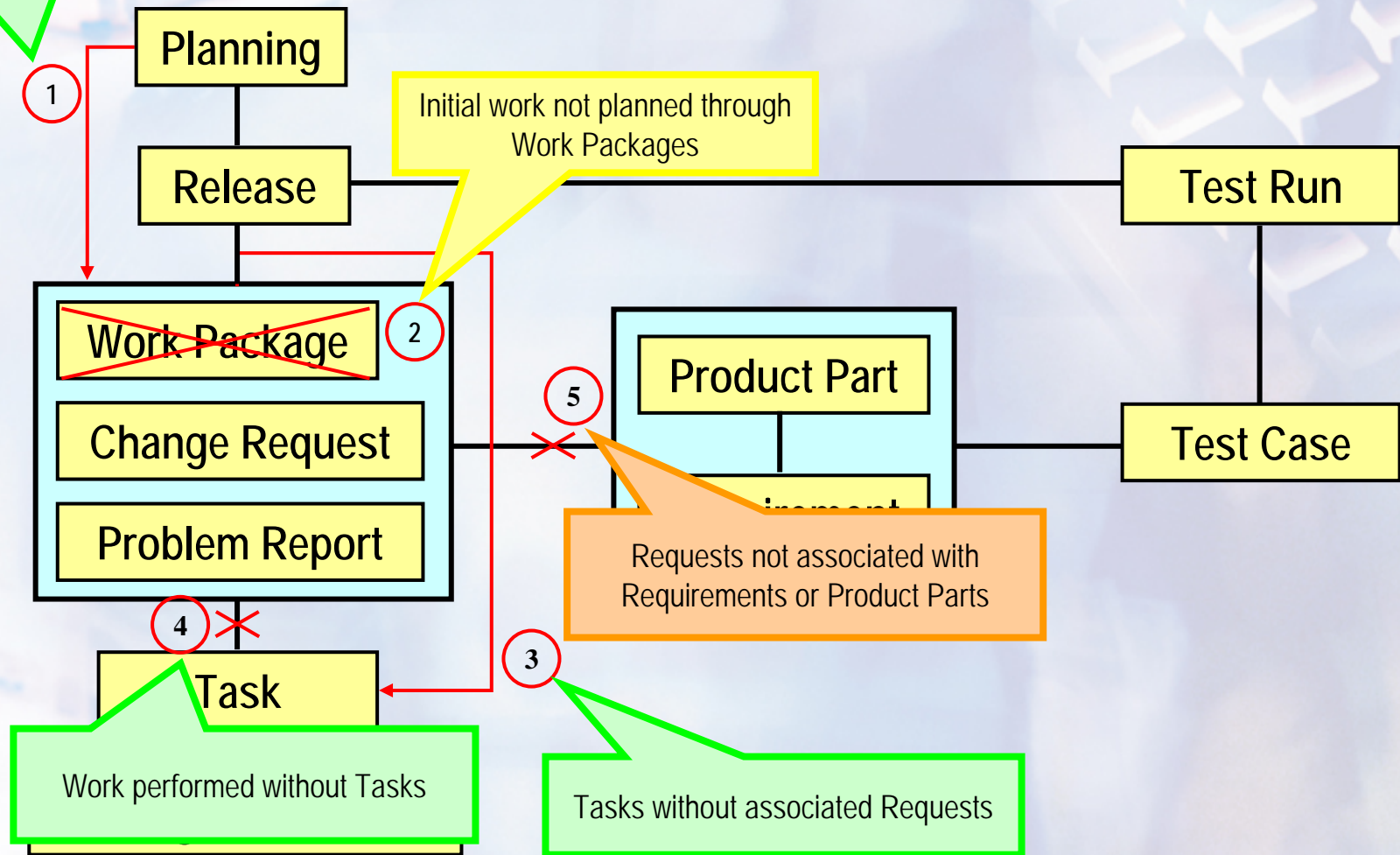
In total 180 concurrent users

After 9 Months of usage, the system already contains:

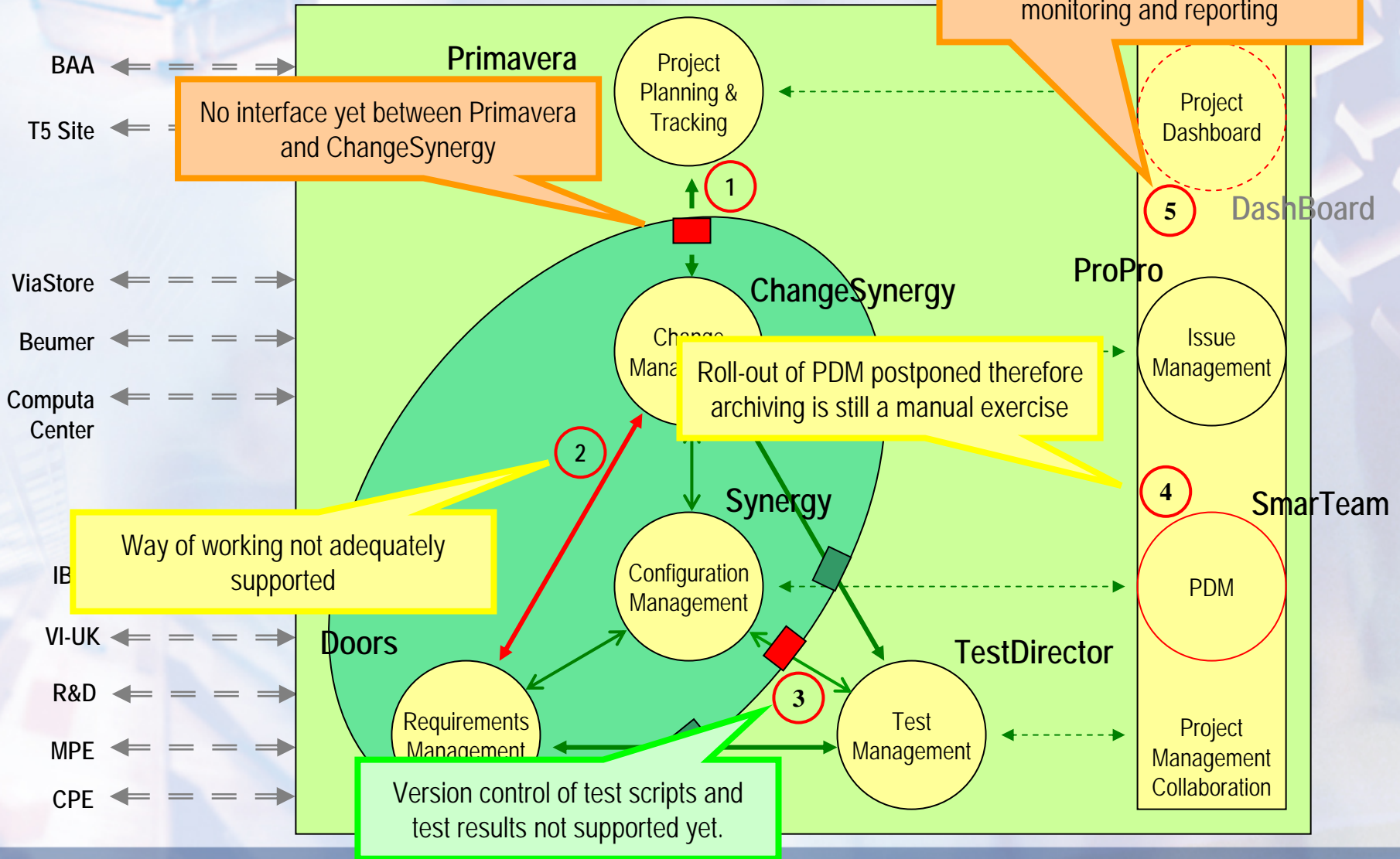
- 2.000 WP's and 10.000 CR's and PR's
- 25.000 Tasks
- 4.000 Requirements
- 60.000 Objects

Process Issues Encountered

No Baselines / Releases defined



Tool Issues Encountered



Lessons Learned

- Although very decisive at the start, contract management lost confidence when results became not visible immediately.
- Finding the right balance between design / implementation and communication / coaching is crucial.
- Combining process roll-out, tool customisation and infrastructure support is a bit too much.
- Installation / customisation of tools not straight forward.
- Steep learning curves by deploying all integrated processes at the same time.
- Component teams sometimes hiding behind the new processes and tools.
- No provisions in initial contracts for partners to cope with additional / changing processes and tools.

Conclusions

- An integrated process framework pays off in a project of this scale and complexity.
- An out-of-the-box solution gives fast results.
- Confidence level BAA dramatically increased.
- Other projects (Barcelona, Schiphol) already adopted the same processes and tools.
- We would not have made it without:
 - A workflow team being able to focus on processes, then on tools
 - BAA pushing us from day one and funding large parts of the hours spent
 - Commitment from department and contract management
 - A lot of hard work and overtime spent
 - Support from Telelogic